Bifold FluidPower Limited

Reliability and innovation in directional control valves

High Flow Valves

Models SPR & PPV

Upto 10 bar Operating Pressure

Superior performance throughout the full operational range

Features:

- Cv up to 70
- 316L stainless steel
- 1/2" NPT, 3/4" NPT & 1" NPT
- SIL 3 rated PPV Range
- Multiple Exhaust Options

INTRODUCTION

Bifold Fluidpower's SPR series spool type valves are positively sealed, for low pressure applications up to 10 bar (145 psi). Primarily designed for handling the hig h flow demands of large swept volume and/or fast acting valve actuators controlling pipeline ESD, process plant, or similar valve applications, these afford a compact, light weight product with exceptional installation versatility.

For systems where the actuator opening times are not critical and a small bore / OD tubing is used for the pressure supply, a smaller port block can be used for the pressure line connection. This eliminates the need for costly reducer fittings. The direction of the supply and vent tubing is also optional by the selection & orientation of direct entry or side entry port bocks.

SPR Valves can be configured as 5/3, 5/2, 3/2 or 2/2, normally closed, normally open or normally universal. Users should note that the pilot operating pressures are higher for normally open configured valves.

Manufactured from 316L grade stainless steel the valves are suited for offshore and other corrosive atmospheres. Materials can be certified compliant to NACE MR-01-75 rendering the valves suitable for sour gas media. Low temperature elastomer seals are also available for arctic service applications.

TECHNICAL INFORMATION

OPERATING MEDIA
- Air and sweet or sour gas

OPERATING PRESSURE
- 0 - 10 bar standard (145 psi)
- 3.0 bar - Minimum Pilot Pressure - Normally Closed
- 5.0 bar - Minimum Pilot Pressure - Normally Open
- P16 Pilot Equaliser Option – 3.0 bar Normally Closed & Normally Open

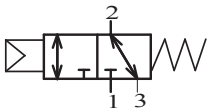
MECHANICAL CONSTRUCTION
- Body:- Stainless steel 316L
- Fasteners:- Metric A4 18/10 316 grade stainless steel
- Seat Material:- Viton (standard). Alternative elastomers available for extreme conditions
- Springs:- Stainless steel 316L
- Ports:- See selection chart oppposite

FLOW PERFORMANCE (CV)
- 1/2" 3.1
- 3/4" 9.0
- 1" 11.1

* Maximum flow achievable using optimum porting blocks configuration

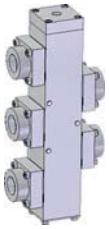
TEMPERATURE RANGE:
-20 °C to +80 °C (standard)
-40 °C to +60 °C (arctic service option)

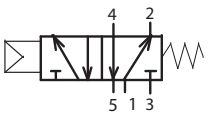
PREFERRED RANGE



SPR12-P1-32-NC-00-02 — 1/2" NPT, pilot operated, 3 way 2 position, normally closed, spring return, C.v. 3.1, 10 bar

SPR25-P1-32-NC-00-02 — 1" NPT, pilot operated, 3 way 2 position, normally closed, spring return, C.v. 11.2, 10 bar





SPR12-P1-52-XX-00-02 — 1/2" NPT, pilot operated, 5 way 2 position, spring return, C.v. 3.1, 10 bar

SPR25-P1-52-XX-00-02 — 1" NPT, pilot operated, 5 way 2 position, spring return, C.v. 11.2, 10 bar

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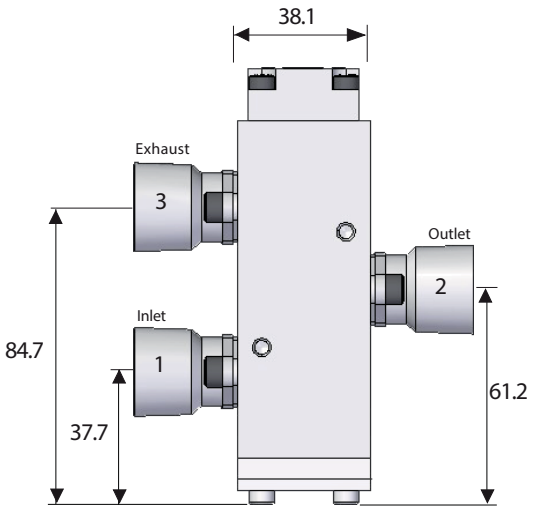
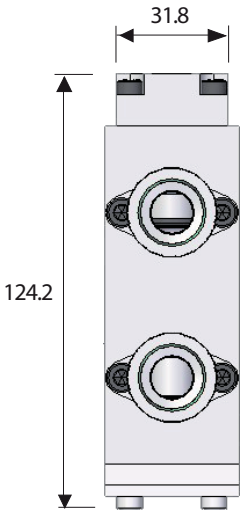
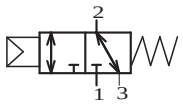
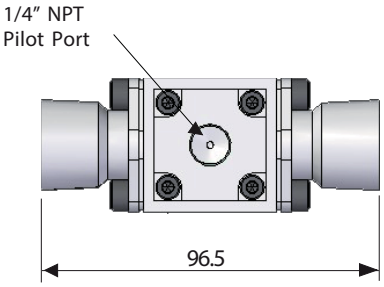
Example Unit:- SPR12-P1-32-NU-00-0 2









SELECTION CHART

SPR	Stainless Steel Poppet Valve	Model Code
ASPR	Arctic Service Stainless Steel Poppet Valve	
12	1/2" NPT	Inlet Size
19	3/4" NPT	
25	1" NPT	
P1	Pilot Operator	Air Pilot Primary Actuator
P9	Air Latch Pilot Operator	
P16	Pilot Equaliser (3.0 bar pilot pressure – NC & NO)	
M1	Push button	Hand / Mechanical Primary Actuator
M6	Lever operated	
M9	Push pull (padlockable)	
M14	Push / pull panel mount	
22	2-way, 2-position	Configuration
32	3-way, 2-position	
52	5-way, 2-position	
53	5-way, 3-position *(Only available with pilot return)*	
NC	Normally closed - 2/2 and 3/2 only	Configuration
NO	Normally open - 2/2 and 3/2 only	
NU	Normally universal	
XX	- 5/2 only	
YY	- 5/3 only	
00	Spring return	Return Device - Secondary Actuator
04	Detent - M6, M9 & M14 only	
04/2	Detent with plunger - M6, M9 & M14 only	
P1	Pilot return	Air Pilot - Secondary Actuator
M15	Pull button spring return with panel mount	Hand / Mechanical - Secondary Actuator
M16	Pull button spring return preliminary latch with panel mount	
K4	Valve exhaust bug vent	Options
K6	BSPP ported option	
XX	Revision Number	

SPR 12 - P1 - 32 - NC - 00 - 02	Ordering Example

PPV Range

Bifold Fluidpower's PPV series poppet valves are positively sealed, for low pressure applications up to 10 bar (145 psi). This range of SIL 3 rated 1 1/2" and 2" valves offers the highest flow available in the market and satisfies the demands of exceedingly large swept volume and/or fast acting valve actuators controlling pipeline ESD, process plant, or similar valve applications. PPV Valves are available as 1, 2 or 3 port exhaust units offering exceptional versatility and flow.

Manufactured from 316L grade stainless steel the valves are suited for offshore and other corrosive atmospheres. Materials can be certified compliant to NACE MR-01-75 rendering the valves suitable for sour gas media. Low temperature elastomer seals are also available for arctic service applications.

TECHNIC AL INF ORMATION

OPERA TING MEDIA
• Air and sweet or sour gas

OPERATING PRESSURE
•0 - 10 bar standard (145 psi)
•2 bar - Minimum Pilot Pressure

MECHANICAL CONSTRUCTION

• Body:-	Stainless steel 316L
• Fasteners:-	Metric A4 18/10 316 grade stainless steel
• Seat Material:-	Viton (standard). Alternative elastomers available for extreme conditions
• Springs:-	Stainless steel 316
• Ports:-	See selection chart below

FLOW PERFORMANCE

• 1 1/2"	tba
• 2"	70.0

* Maximum flow achievable using optimum porting blocks configuration

TEMPERATURE RANGE:
-20 °C to +178 °C (standard)
-60 °C to +60 °C (arctic service option)

Please note that following test results were obtained from testing with a hydraulic damper present on the actuator

Large actuator - 580L - with hydraulic damping
P1 = 6 bar

Indoors - T amb. 19 degC

1 Valve

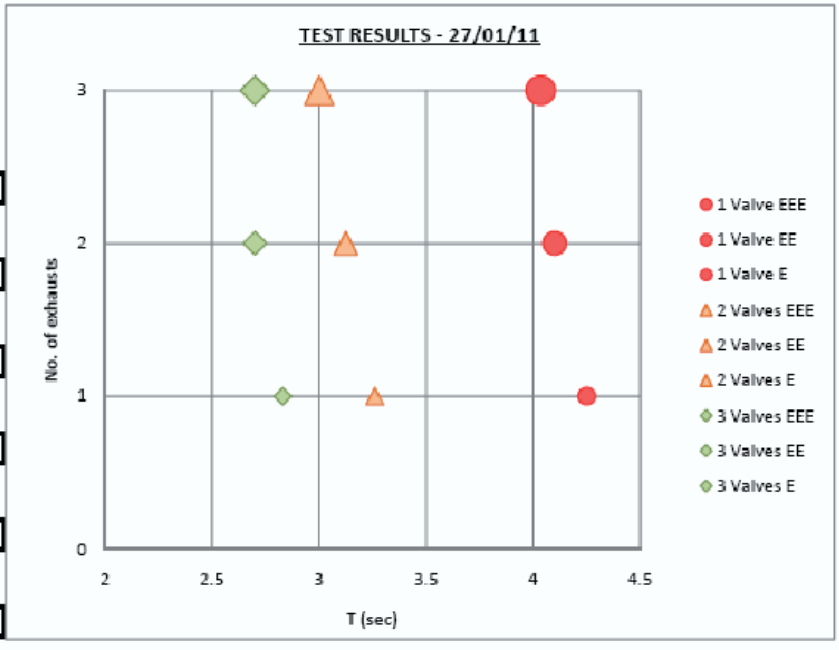
	EEE	EE	E
T1	4	4.1	4.3
T2	4.07	4.1	4.2
T_av	4.035	4.1	4.25

2 Valves

	EEE	EE	E
T1	3	3.1	3.27
T2	3	3.15	3.25
T_av	3	3.125	3.26

3 Valves

	EEE	EE	E
T1	2.7	2.7	2.83
T2	2.7	2.7	2.83
T_av	2.7	2.7	2.83

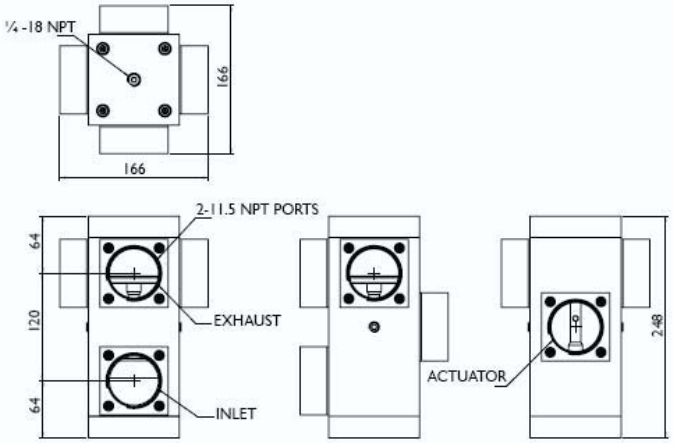


CYCLES

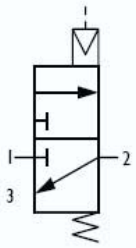
1 Valve with 'EEE' config was subjected to cycle testing. (Perceived as the most arduous setup)
For installation reasons this was the valve which recirculated it's exhaust back to the spring cavity
It underwent 10 cycles, the following times were recorded.

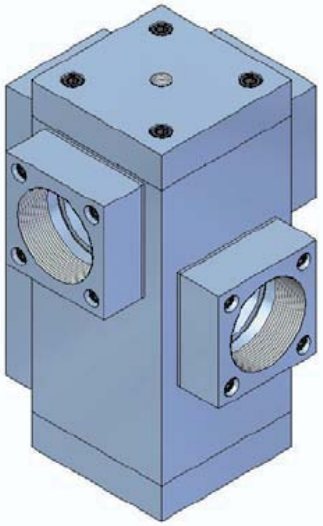
4	4.1	4.1	**4.1**
4.07	4.1	4.1	
4.07	4.1	4.1	

Dimensional Drawings



SCHEMATIC 3/2 NC





3 Exhaust Port Model

PPV Selection Chart - Ordering Example

		Model Code
PPV		
24	1½" NPT	Connections
32	2" NPT	
02	Stainless Steel 316L Mounting Block	Material
53	Aluminium Mounting Block	
22	2 - way, 2 - position	Valve Configuration
32	3 - way, 2 - position Divertor Selector Configurations Available	
NO	Normally Open	Valve Configuration
NC	Normally Closed	
NU	Normally Universal (K54 Only)*	
00	Voltage 24 & 48 Vdc	Voltage
P1	(K54 Only)*	
E	Single Exhaust	Exhaust Options
EE	Double Exhaust	
EEE	Triple Exhaust	
V	Viton (Standard)	O-ring material
AL	Fluorosilicone	
K54	Block After Bleed (BAB)	Options
XX		Revision Number
PPV - 32 - 02 - 32 - NC - 00 - EEE - V - K54 - XX		Ordering Example

* K54 = Block After Bleed (BAB)

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Quality Assurance

All Bifold Fluidpower products are manufactured to a most stringent QA programme. Every care is taken at all stages of manufacture to ensure that every product will give optimum performance and reliability. We are recognised to BS EN ISO 9001:2008. Functional test certificate, letter of conformity and copies of original mill certificates, providing total traceability are available on request, to BS EN 10204 3.1where available. The manufacturer reserves the right to make changes to the specifications and design etc., without prior notice

Accuracy of information

We take care to ensure that product information in this catalogue is reasonably accurate and up-to-date. However, our products and services are continually updated so to ensure accurate and up-to-date information please refer to the issue list on the web site or contact a member of our sales team.